Remarks

Applicant has addressed each issue in turn and, for clarity, has provided a heading for each issue.

I. Continued Examination Under 37 C.F.R. 1.114

Applicants appreciate Examiner's entrance of the Request for Continued Examination under 37 C.F.R. 1.114, filed March 10, 2003.

II. Priority

Applicants desire to obtain the benefit of the prior United States Application Serial No. 08/844395, filed 04/18/97, now United States Patent No. 6,010,533 under 35 U.S.C. § 120 and 37 C.F.R. 1.78. Applicants are currently seeking a new oath to perfect the claim to priority.

III. Oath/Declaration

Applicants are in the process of obtaining a new oath with the priority claim corrected pursuant to M.P.E.P. 602.02.

IV. Specification

The specification has been corrected to claim priority to 08/844395, filed 04/18/97, now United States Patent No. 6,010,533 (not 6,010,633).

V. Claim Rejections – 35 U.S.C. § 103

Claims 80-122 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Buechel et al. (United States Patent No. 5,702,448) in view of Frushour (United States Patent No. 5,011,515). Applicants respectfully submit that the Examiner has not established a prima

facie case of obviousness as the prior art as a whole lacks a suggestion to combine the above listed references.

The Examiner states that "[t]he motivation to use Frushour's teaching to form a high impact and abrasion resistant device is that hip joints require great resistance to wear..." Office Action, p. 4. However, there is nothing in the prosthetic joint field that suggests that someone of ordinary skill in the art look to the rock drilling field. Frushour is limited to the formation of high impact and abrasion resistant devices for rock drill cutters, not prosthetic joints, and is therefore, a non-analogous field of art. This combination of references from non-analogous fields, is not supported by the law. In order to establish a prima facie case of obviousness, there must be a teaching in the prosthetic joint field that one should look to the rock drilling field. There is no such reference in the prosthetic joint field, so no prima facie case of obviousness has been established.

In addition, Frushour teaches the use of irregularities in the substrate surface to increase the surface area for bonding. Col. 3, lines 13-21. These surface irregularities are not the same as a gradient transition zone as disclosed and claimed in the current application. Rather, the Application defines a gradient transition zone as:

> "...a gradient interface between diamond table and substrate with a gradual transition of ratios between diamond content and metal content. At the substrate side of the transition zone, there will be only a small percentage of diamond crystals and high percentage of substrate metal, and on the diamond table side, there will be a high percentage of diamond crystals and a low percentage of substrate metal. Because of this gradual transition of ratios of polycrystalline diamond to substrate metal in the transition zone, the diamond table and the substrate have a gradient interface.
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> In the transition zone where diamond crystals and substrate metal are intermingled, chemical bonds are formed between the diamond and the metal. From the transition zone 404 into the diamond table 403, the metal content diminishes and is limited to solvent-catalyst metal that fills the three-dimensional vein-like structure of interstitial voids or openings 407 within the sintered diamond table structure 403. The solvent-catalyst metal found in the voids or openings 407 may have been swept up from

the substrate during sintering or may have been solvent-catalyst metal added to the diamond feedstock before sintering."

Application, p. 44, first and second paragraphs.

Buechel et al. discloses a prosthetic device with a smooth articulating surface having a substrate coated with diamond through ionic bonding. Col. 5, lines 14-16 and col. 8, lines 7-15 and 48-66. Ionic bonding of diamond to a substrate is entirely different from sintering to provide a diamond layer as claimed in the Application. Ionic bonding of diamond essentially provides a coating, much like a layer of paint, that sticks fairly well to metal compared with sintering in which a continuous transition from metal to diamond occurs, such that the two materials are integral with one another. In addition, sintering provides an increased durability, as a result of the integration between the substrate and the diamond, that is not achievable through ionic bonding. Therefore, Buechel et al. does not disclose a gradient transition zone.

The Examiner further states in viewing Buechel et al. that "[i]t is inherent that the materials have CTEs and moduli that are different since the substrate and coating are different." However, Applicants respectfully submit that regardless of whether a material's CTE or modulus is inherent, using materials of different CTEs or moduli to cause a diamond table to better bond in a sintering process to a substrate was not known in the prosthetic field prior to Applicants' invention. Applicants invented that technique. Since Buechel et al. did not use sintering, he had no chance to ever think of using different moduli and CTE to establish a stronger diamond to substrate bond in a sintered prosthetic joint component.

Thus, Applicants respectfully request that the Examiner withdraw the § 103 rejection as a prima facie case of obviousness has not been established.

VII. Conclusion

In view of the foregoing, and in summary, Applicant believes that all issues and points of the Examiner's Office action have been addressed in a sincere effort to advance prosecution of this Application. Applicant respectfully requests reconsideration and allowance of the pending claims.

Please debit Deposit Account No. 50-0581 for any additional fees.

Dated this 4th day of August, 2003.

Respectfully submitted,

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